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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/837,800	04/18/2001	Daniel A. Japuntich	48317USA1N.033	9996

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Attention: Karl G. Hanson
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EXAMINER	
LEWIS, AARON J	
ART UNIT	PAPER NUMBER
3761	

DATE MAILED: 03/12/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/837,800	Applicant(s) DANIEL A. JAPUNTICH ET AL.
	Examiner AARON J. LEWIS	Art Unit 3761

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *THREE* MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *Apr 18, 2001*

2a) ☐ This action is **FINAL.** 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *33-68* is/are pending in the application.

4a) Of the above, claim(s) _____ is/are withdrawn from consideratio

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *33-68* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claims _____ are subject to restriction and/or election requirement

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

a) ☐ All b) ☐ Some* c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

15) ☒ Notice of References Cited (PTO-892)
16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). *02*
18) ☐ Interview Summary (PTO-413) Paper No(s). _____
19) ☐ Notice of Informal Patent Application (PTO-152)
20) ☐ Other:

DETAILED ACTION

Double Patenting

1. Claims 33-68 of this application conflict with claims 33,35-57,59-63,65,66 of Application No.09/680,465; 34-44 of 08/240,877; 33-71 of 09/678,579; 33-58,60-67 of 09/678,580; 33-54,56-61 of 09/678,488; 33-54,56 of 09/677,637; 33-36,38-62,64-66 of 09/677,636; and 33-64 of 09/837,714. 37 CFR 1.78(b) provides that when two or more applications filed by the same applicant contain conflicting claims, elimination of such claims from all but one application may be required in the absence of good and sufficient reason for their retention during pendency in more than one application. Applicant is required to either cancel the conflicting claims from all but one application or maintain a clear line of demarcation between the applications. See MPEP § 822.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 33-37,41-43,50-53,55-63,65-68 are rejected under 35 U.S.C. 103(a) as being unpatentable over Simpson et al.('516) in view of McKim ('168).

As to claim 33, Simpson et al. disclose a filtering face mask that comprises: a mask body (1,2) that is adapted to fit over the nose and mouth of a wearer, the mask body comprising a filtration layer (page 1, lines 108-113) through which inhaled air may pass before being inhaled by a wearer of the face mask; and an exhalation valve (fig.2) that is attached to the mask body, the exhalation valve allowing air exhaled by a wearer to pass from an interior of the mask body to its exterior without having to pass through the filtration layer, the exhalation valve comprising: a valve seat that comprises: a seal surface (page 2, lines 37-50 and #19); and an orifice (16) that is circumscribed by the seal surface; and a single flexible flap (15) that has one stationary portion (page 2, lines 46-50) and one free portion and a circumferential edge, the circumferential edge having a first segment that is associated with the one stationary portion of the flap so as to remain at rest during an exhalation and having a second segment that is associated with the one free portion of the flexible flap so as to be lifted away from the seal surface during an exhalation, the second segment of the circumferential edge also being located below the first segment when the filtering face mask is worn on a person (fig.1).

The difference between Simpson et al. and claim 33 is the flexible flap being mounted to the valve seat such that the one free portion of the flap exhibits a curvature when viewed from the side and is pressed towards the seal surface in an abutting relationship with it when a fluid is not passing through the orifice.

McKim teaches a flexible flap being mounted to the valve seat such that the one free portion (opposite the fixed portion #14a as illustrated in figs.1 and 3) of the flap exhibits a curvature when

viewed from the side and is pressed towards the seal surface in an abutting relationship with it when a fluid is not passing through the orifice for the purpose of seating quickly, effectively and without float or bounce after each opening (col.1, lines 64-72).

It would have been obvious to modify the exhalation valve of Simpson et al. to be mounted to the valve seat such that the one free portion (opposite the fixed portion #14a as illustrated in figs.1 and 3) of the flap exhibits a curvature when viewed from the side and is pressed towards the seal surface in an abutting relationship with it when a fluid is not passing through the orifice for because it would have provided for seating quickly, effectively and without float or bounce after each opening as taught by McKim.

As to claim 34, the flexible flap of Simpson et al. as modified by McKim is not wholly circular when view from the front (see fig.2 of McKim).

As to claim 35, Simpson et al. (figs.1 and 2) illustrate the second segment of the circumferential edge of the flexible flap having a circular curvature that corresponds to a circularly shaped seal surface disposed beneath the second segment of the flap's circumferential edge.

As to claims 36 and 37, the valve seat of Simpson et al. as modified by McKim (#15 and #28 of fig.3) illustrates a planar flap retaining surface, the flexible flap being mounted to the flap-retaining surface.

As to claim 41, the flap retaining surface includes two securement points both disposed outside a region encompassed by the orifice (e.g. see #17 of McKim).

As to claims 42 and 43, the curvature in the flexible flap (14) of McKim (fig.1) extends from a point where the flap os mounted to the valve seat to a second point where the free portion of the flexible flap makes contact with the seal surface and the curvature does not have an inflection point.

As to claim 50, Simpson et al. (fig.2) discloses the valve seat including a flange portion that defines a mounting surface for the valve seat, which surface extends 360 degrees around the valve seat an its base and enables the valve seat to be secured to the mask body.

As to claims 51-53, McKim (fig.1) teaches the flexible flap assuming a curved profile, when in its closed state, the extends in from where the flexible flap contacts a retaining surface on the valve seat to where the second portion of the flexible flap contacts the seal surface of the valve body portion. Further, the flap retaining surface is oriented transversely to and adjacent the orifice in Simpson et al. and in McKim (fig.2).

As to claim 55, the flexible flap of Simpson et al. is mounted to the valve seat in cantilever fashion.

As to claim 56, the particular material from which the valve seat of Simpson et al. is made and the manner of making the valve seat can be arrived at through mere routine obvious experimentation and observation with no criticality seen in any particular material including a relatively light weight plastic. Inasmuch as Simpson et al. (page 2, lines 37-65) disclose the valve flap being made from plastic and/or rubber material, it would have been obvious to make the valve seat from any well known material which would achieve known or expected results including a

plastic and/or rubber material because the use of a valve seat of the same material as the valve flap would have provided for more effective physically cooperation.

As to claim 57, Simpson et al. disclose the flexible flap being pressed towards the seal surface such that there is a substantially uniform seal when the valve is in a closed position (page 2, lines 39-42). The seal (figs.2 and 3) of Simpson et al. are illustrated as being substantially uniform and since the flexible flap (15) of Simpson et al. is disclosed of being made from plastic and since known physical characteristices of plastics include flexibility and resiliency, the flap (15) of Simpson et al. being made from plastic is fully capable of providing the recited function of "...capable of allowing the flap to display a bias towards the seal surface.".

As to claim 58, the bias of the valve flap of Simpson et al. as modified by McKim is generated by the mounting of the flap to the valve seat as illustrated by McKim.

As to claims 59 and 60, the degree of a seal between the valve flap and valve seat sealing surface of Simpson et al. can be arrived at through mere routine obvious experimentation and observation with no criticality seen in any particular degree of seal. Further, it stands to reason that one oridinary skill in the art would strive to make a face mask in accordance with at least minimum current government standards of operation including one having a valve flap having a stress relaxation sufficient to keep the flexible flap in an abutting relationship to the seal surface under any static orientation for 24 hrs. at 70 degrees centigrade. The flexible flaps (15,18) of Simpson et al. is disclosed as being made of plastic and/or rubber for example (page 2, lines 39 and line 53). It would have been obvious to make the flexible flap from any well known flexible

material including an elastomeric rubber such a polyisoprene as mere substitution of one well known flexible material for another and because elastomeric rubber is a well known material from which to make valve flaps.

As to claim 61, the particular dimensions, the particular material including the hardness of the material of the flexible flap (15,14) of Simpson et al. can be arrived at through mere routine obvious experimentation and observation with no criticality seen in any particular dimensions nor in any particular constituency.

As to claim 62, Fig.2 of Simpson et al. illustrate the flexible flap (15) to be longer in the direction extending from the first segment of the circumferential edge to the second segment.

As to claim 63, while Simpson et al. is silent as to the relative surface areas of the fixed and free portions of flap (15), it is submitted that the particular relative amounts of the fixed and free portions can be arrived at through mere routine obvious experimentation and observation with no criticality seen in any particular relative amounts including 10-25% fixed and 75-90% free.

As to claim 65, Simpson et al. (page 1, lines 116-123) disclose the mask body is cup-shaped and comprises at least one shaping layer for providing structure to the mask, and a filtration layer, the at least one shaping layer being located outside of the filtration layer on the mask body.

As to claims 66 and 67, while Simpson et al. do not address the particular volume of a wearer's exhalation exiting the exhalation valve (12), it is submitted that since the exhalation valve (12) is expressly disclosed as opening in response to a wearer's exhalation, the valve of Simpson et al. is fully capable of providing the recited function inasmuch as it would remain opened as long as a

wearer is exhaling which would enable most if not all of the volume including 60-73% of gas exhaled by a wearer to pass through valve 12 of Simpson et al..

As to claim 68, the exhalation valve of Simpson et al. (fig.1) is positioned on the mask body substantially opposite to a wearer's mouth.

4. Claims 38-40,44,64 are rejected under 35 U.S.C. 103(a) as being unpatentable over Simpson et al. in view of McKim as applied to claims 33-37,41-43,50-53,55-63,65-68 above, and further in view of French patent (1,209,475).

The difference between Simpson et al. as modified by McKim and claim 38 is a valve cover, the valve cover having an opening that allows exhaled air to pass therethrough and also having a surface that holds the flexible flap against the flap-retaining surface on the valve seat.

French patent ('475) teaches a valve cover (#2 of figs.3 and 4), the valve cover having an opening that allows exhaled air to pass therethrough and also having a surface (15,35) that holds the flexible flap against the flap-retaining surface on the valve seat for the purpose of directing fluid which passes through the orifice as well as protecting the valve flap against debris.

It would have been obvious further modify the valve of Simpson et al. to add a valve cover because it would have provided a means for directing exhaled gas away from a wearer's face and provided a means for protecting the valve flap against debris as taught by French patent ('475).

As to claims 39 and 40, the flexible flap is secured to the valve seat by mechanical clamping (15,35 of French patent '475) and the flap-retaining surface of Simpson et al. as further modified by French patent ('475) is disposed on one side of the seal surface (fig.2 of Simpson et al.).

As to claim 44, French patent ('475) teaches a valve cover having a fluid impermeable ceiling which increases in height in the direction of the flexible flap from the first segment of the circumferential edge towards the second segment of the edge.

As to claim 64, the flexible flap and valve cover of Simpson et al. as further modified by French patent ('475) are positioned on the valve seat such that exhaled air is deflected downward during an exhalation when the filtering face mask is worn on a person (fig.1 of Simpson et al.).

5. Claims 45-49,54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Simpson et al. in view of McKim as applied to claims 33-37,41-43,50-53,55-63,65-68 above, and further in view of Braun ('362).

The difference between Simpson et al. as modified by McKim and claim 45 is the opening in valve cover has cross-members extending thereacross and is positioned directly in the path of fluid flow approximately parallel to the path traced by the second segment of the circumferential edge during opening and closing of the free portion of the flexible flap.

Braun, in an exhalation valve for a filtering face mask, teaches cross members (25) that are disposed within the opening of the valve cover for the purpose of protecting the valve against debris (col.4, lines 25-26).

It would have been obvious to modify the the valve of Simpson et al. to add a valve cover because it would have provided a means for directing exhaled gas away from a wearer's face and provided a means for protecting the valve flap against debris as taught by Braun.

As to claims 46-48, Braun teaches cross members (19,20) disposed within the orifice and which are slightly recessed beneath the seal surface (18) for the purpose of increasing the sealing force (col.4, lines 36-41). The cross members would assist in preventing the flexible flap from being drawn into the orifice during an inhalation.

As to claim 49, the shape of the orifice (16) of Simpson et al. does not wholly correspond to the shape of the seal surface.

As to claim 54, Braun teaches a seal ridge (18) which extends upwardly of a peripheral mounting flange for the purpose of increasing the sealing force.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aaron J. Lewis whose telephone number is (703) 308-0716.

Aaron J. Lewis

March 10, 2002

Aaron J. Lewis
Primary Examiner